

WHAT IS CLAIMED IS:

1. A printing apparatus, comprising:
a curved member carrying a stamp surface, said stamp surface including a pattern, wherein said curved member is configured to roll over a substrate to be printed on with said pattern; and
an illumination system for directing light to a region of contact between said stamp surface and said substrate.
2. The apparatus of Claim 1, wherein said curved member has a triangular cross section with curved sides.
3. The apparatus of Claim 1, wherein said illumination system is located inside said curved member.
4. The apparatus of Claim 1, further comprising thermal elements for controlling temperature of said curved member, for aligning said stamp surface, and for correcting magnification of said stamp surface.
5. The apparatus of Claim 1, wherein said stamp surface is comprised of glass.
6. The apparatus of Claim 1, further comprising a resist mechanism for providing a layer of resist on a target portion of said substrate.
7. The apparatus of Claim 6, wherein said resist comprises a liquid that sets when illuminated.
8. The apparatus of Claim 1, further comprising alignment markers along said stamp surface for aligning with markers along said substrate.

9. A device manufacturing method, comprising:
providing a substrate;
providing a layer of resist on said substrate;
providing a beam of radiation using an illumination system;
providing a curved member with a pattern on a surface thereof;
rolling said curved member over said substrate to transfer said pattern onto said layer of resist on said substrate; and
projecting the beam of radiation onto said layer of resist on said substrate.
10. A printing apparatus for nanometric scale imprinting, comprising:
a curved member carrying a stamp surface, said stamp surface including a pattern wherein said curved member is configured to roll over a substrate to transfer said pattern onto said substrate;
a resist mechanism for providing a layer of resist on said substrate; and
an illumination system for directing light onto a region where said stamp surface has contacted said layer of resist on said substrate;
11. The apparatus of Claim 10, wherein said curved member has a triangular cross section with curved sides.
12. The apparatus of Claim 10, wherein said illumination system is located inside said curved member.
13. The apparatus of Claim 10, further comprising thermal elements for controlling temperature of said curved member.
14. The apparatus of Claim 10, wherein said stamp surface is comprised of glass.

15. The apparatus of Claim 1, further comprising alignment markers along said stamp surface for aligning with markers along said substrate.